

**REMARKS**

Claims 1-24 are currently pending in this application. In the Office Action mailed September 21, 2004 (the "Office Action"), claims 1-24 were rejected and claims 1, 2, 9, 10, 17 and 18 were objected to for various informalities. In response, claims 1-2, 5, 9-10, 13, 17-18 and 21 have been amended herewith. Applicants respectfully request favorable consideration of the present application in light of the amendments to the claims and specification, and the following remarks.

**I. Oath/Declaration**

In paragraph 1 of the Office Action, the declaration was deemed to be defective because it did not identify the city and either state or foreign country of residence of each inventor. The Office Action correctly states that a copy of the Declaration for Utility or Design Application Using an Application Data Sheet (37 CFR 1.76) that was originally submitted with parent application U.S. Serial No. 09/860,648 was filed with the present application on March 29, 2004, and further states that no copy of an Application Data Sheet is in the file. The parent file did include a sheet containing "Inventor Information" including each inventor's name, postal address, and citizenship, as well as "Correspondence Information," "Application Information," and "Continuity Information." This sheet was inadvertently omitted with the copy of the declaration originally submitted in the present application. Applicants have resubmitted the copy of the original declaration as submitted with the parent application along with the copy of

the inventor information sheet that was also submitted with the original application, and further believe that this action should rectify the defect in the declaration.

## **II. Specification**

In paragraph 2 of the Office Action, the disclosure was objected to for several informalities. Applicants have revised the section entitled "CROSS-REFERENCES TO RELATED APPLICATIONS" in order to correct these informalities. In particular, Applicants have added "and issued as U.S. Patent No. 6,760,616 on July 6, 2004" after "May 18, 2001" in order to correctly reflect the current status of the parent application. Furthermore, Applicants have replaced "60/243/465" with "60/243,465" in accordance with the Office Action. The remainder of the specification has been reviewed and no other errors are believed to exist. No new matter has been added.

## **III. Claim Objections**

In paragraphs 4-9 of the Office Action, claims 1, 2, 9, 10, 17 and 18, respectively, were objected to because of several informalities. Claims 1, 2, 9, 10, 17 and 18 have been amended to correct these informalities, and applicants respectfully assert that these claim objections should be withdrawn as moot.

## **IV. Claim Rejections – 35 USC § 102**

Claims 1-24 were rejected by the Office Action under 35 USC § 102(b) as being anticipated by U.S. Pat. No. 5,759,159 to Masreliez ("Masreliez"). Applicant respectfully traverses this rejection as set forth below.

In order for a reference to anticipate the present claimed invention under 35 USC 102(b), it must be shown that each and every element of the claim can be found in the reference. If it can be shown that one element of the claim is missing or not met by the cited reference, the rejection must be withdrawn as inappropriate.

Claim 1, as amended, recites a method of *identifying a characterized body tissue located adjacent to a conductive element of a probe* comprising the steps of (a) applying an electrical signal to the conductive element; (b) determining characteristics of the applied signal, including a phase angle; and (c) identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone and cancellous bone.

Claim 9, as amended, recites an article of manufacture for use in *identifying a characterized body tissue located adjacent to a conductive element of a probe*, the article of manufacture comprising computer readable storage media including program logic embedded therein that causes control circuitry to perform the steps of (a) applying an electrical signal to the conductive element; (b) determining characteristics of the applied signal, including a phase angle; and (c) identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone and cancellous bone.

Claim 17, as amended, recites an apparatus for use in *identifying a characterized body tissue located adjacent to a conductive element of a probe*, the apparatus including (a) means for applying a signal to the conductive element; (b) means for determining characteristics of the signal, including a phase angle of the signal; and (c) means for identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone and cancellous bone.

The Masreliez reference appears to be silent with regard to at least one element found in amended Claims 1, 9 and 17 of the claimed invention. Among other voids, the Masreliez reference does not disclose the element of Claims 1, 9 and 17 involving *identifying a characterized body tissue located adjacent to a conductive element of a probe*. The Masreliez reference appears to be concerned only with finding the apex of a root canal, particularly where the root canal ends and the patient's tissue begins (*col. 1, lines 23-25*). Notably, the apparatus and method in the Masreliez reference is focused on detecting changes in the node voltage  $V_p(f_i)$  produced by the probe current  $I_p(f_i)$ , including phase angles  $\emptyset_1$ - $\emptyset_5$  and amplitudes  $A_1$ - $A_5$  which signal that the distal end of the probe is approaching body tissue (*col. 3 line 57 – col. 4, line 10*). The Masreliez reference neither teaches nor suggests identifying the type of body tissue that the probe may encounter. Rather, the Masreliez reference relies on the difference in impedance  $Z$  between the root canal (i.e. enamel) and body tissue (*col. 3, line 66 – col. 4, line 5, and*

*col. 5, lines 20-25*) to determine the location of the probe relative to body tissue in general.

Because the Masreliez reference is silent to at least one element of amended Claims 1, 9 and 17, it is respectfully requested that the rejection of Claims 1-24 in the Office Action be withdrawn. Claims 1, 9 and 17 are believed to be in proper condition for allowance and an indication of such is hereby earnestly solicited. Claims 2-8, 10-16, and 18-24, being dependent upon and further limiting independent Claims 1, 9 and 17, should be deemed allowable for the reasons set forth in support of the allowability of Claims 1, 9 and 17, as well as the additional features they contain.

**V. Double Patenting**

Claims 1-24 were rejected by the Office Action under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,760,616. In response to this rejection, Applicants are willing to timely file a terminal disclaimer in compliance with 37 CFR 1.321(c) upon condition of allowance.

**PATENT**  
Application Serial No. 10/812,038  
Attorney Ref. No. 059US2

**CONCLUSION**

The foregoing amendment has been submitted to place the present application in condition for allowance. Favorable reconsideration and allowance of the claims in this application is respectfully requested. Furthermore, Applicant hereby authorizes a payment of \$510.00 fee for the Petition for Extension of Time for 3 months. No other fees are deemed necessary at this time. However, in the event that there are any additional fees to be charged or payments to be credited, the applicant hereby request that any charges or credits be made to Deposit Account No.: 50-2040 for Customer No.: 30,328. In the event that there are any questions concerning this Amendment or the application in general, the Examiner is cordially invited to telephone the undersigned attorney so that prosecution may be expedited.

Respectfully submitted,  
NUVASIVE, INC.

By: 

Jonathan Spangler, Esq.  
Registration No. 40,182

4545 Towne Centre Court  
San Diego, CA 92121  
Tel.: (858) 243-0029

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